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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,312	11/10/2003	Ricky Dion Barnes	5198-001	4460
24112	7590	01/17/2007		
COATS & BENNETT, PLLC P O BOX 5 RALEIGH, NC 27602			EXAMINER CRABTREE, JOSHUA DAVID	
			ART UNIT	PAPER NUMBER
			3714	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/17/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/705,312

Applicant(s)

BARNES ET AL.

Examiner

Joshua D. Crabtree

Art Unit

3714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2006.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-40 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 21-40 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. In response to the amendment dated 09/07/2006; claims 1-20 cancelled; claims 21-40 pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/07/2006 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 21, 22, 25-27, 29-32, and 34-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Judd (US 4,934,937).

With regard to claim 21-40, the broadly claimed structural limitations can be read as pertaining to any system used to train a person to remain below a vertical boundary. Such systems may include those used to train firefighters or soldiers, as well as gaming systems with simulated battle scenarios.

With regard to claims 21 and 35, and the limitation of an emitter positioned at a fixed location and configured to establish a height limit at the vertical boundary, Judd discloses an enemy fire simulator device which emits lasers (Col. 3: 13-21; See item 30 in Fig. 1; *Note the height limit corresponding to about the shoulder height of the soldier in Fig. 1*).

With regard to the claims 21, 22, 31, 35, and 36, and the limitation of a wearable sensor configured to emit an alarm signal responsive to intrusion above the vertical boundary (as in claims 21 and 22), and an adjustable vertical support to position the emitter at the vertical boundary (as in claim 22), an adjustment mechanism to selectively position the emitter at selected vertical positions (as in claim 31), and adjusting a vertical position of the height limit to different vertical boundaries (as in claim 36), Judd discloses a wearable detector and alarm apparatus, which emits an alarm sound if the wearer comes into contact with a laser (Col. 3: 39-55; See also Fig. 1), Figure 1 shows a user wearing a harness containing sensors (harness shown with sensors 53, in Fig. 3). Therefore, if the wearable sensor comes into contact with an emitted laser, then the sensor is above the height boundary defined by the laser. The user must therefore remain below the laser boundary in order to prevent being struck by a laser. Additionally, Judd shows in Fig. 2, that the laser (Item 33 in Fig. 2) is

positioned to emit the beam through a vertical slot (Item 34 in Fig. 1). The vertical slot appears in Fig. 1, to be such that it could accommodate various height adjustments of the laser. Additionally, the member upon which the laser is mounted could be adjusted such that the laser height would be changed. Therefore, the height boundary defined by the laser could be adjusted by moving the laser (Item 33 in Fig. 2) to different height positions in slot 34 (Figs. 1-2).

With regard to claim 25, and the limitation wherein the emitter establishes a 360-degree detection zone that forms the height limit, Judd discloses that the channel in which the laser is mounted may be pivoted (Col. 3: 18-21, 62-64; Item 35 in Fig. 2). Therefore, the angle and location of the laser may be adjusted. The number of degrees covered by the laser would depend on the amount of pivot. Therefore, the laser emitter of Judd is inherently capable of emitting lasers within a 360-degree zone, since the amount of pivot could be such that 360 degrees of pivot is possible.

With regard to claim 26, Judd discloses that the enemy fire simulator may emit laser beams (Col. 3: 13-18).

With regard to claims 27, 34, and 39, and the limitation wherein the sensor further includes a speaker to emit an audible sound responsive to intrusion above the height limit, Judd discloses that the user may be notified with audio alarms if a player has come into contact with an emitted beam, as previously described.

With regard to claim 29, and the limitation of an emitter configured to establish a height limit, Judd discloses a laser emitter device, as previously described. With regard

to the limitation of a vertical support member adapted to position to emitter at a vertical position to establish the height limit at the vertical boundary, Judd discloses that the laser emitter is located on a vertical support device (Col. 3: 13-15; Item 32 in Fig. 1). Judd discloses a wearable sensor, as previously described.

With regard to claim 30, and the limitation wherein the emitter further comprises an emitter head that is rotatable and mounted to the vertical support member, Judd discloses the laser device is mounted on a pivotable base, as previously described (Col. 3: 15-21).

With regard to claim 32, and the feature wherein the adjustment mechanism is configured to selectively position the emitter at selected angular positions, Judd discloses that a motor pivots the laser emitter to fire in various directions (angles) (Col. 3: 62-67).

With regard to claim 35, and the limitation of defining a height limit at the vertical boundary, Judd discloses a laser emitter positioned on a vertical support mechanism (Item 32 in Fig. 2; *Note the height limit corresponding to about the shoulder height of the soldier in Fig. 1*). Judd discloses the wearable sensor configured to emit an alarm signal, as previously described.

With regard to claims 37 and 38, and the limitation wherein the step of defining the height limit at the vertical boundary comprises establishing the height limit at a constant level that is substantially parallel to the floor (as in claim 37), and establishing the height limit at an angle relative to the floor (as in claim 38), Judd shows a

representation of various emitted signals in Fig. 1, each of which appears to be at different angles relative to the floor (which would include an angle of zero degrees, or parallel to the floor).

With regard to claim 40, and the limitation wherein the alarm signal is stopped once the sensor is positioned back below the height limit Judd discloses that while a wearable sensor is in close proximity to a laser beam, the alarm emits a beeping sound (Col. 4: 1-22). While Judd does not explicitly disclose that the beeping ceases once the user is out of range of the signal, Judd does disclose that the beeping is caused by an electrical signal which is only sent while the sensor is close to a laser beam (Col. 3: 48-53). Therefore, the invention of Judd is inherently capable of supporting the feature wherein the alarm sound ceases once a trainee has moved out of range of the laser beam.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Judd in view of Gerber (US 5,788,500).

With regard to claim 23, Judd does not disclose redirecting elements spaced away from the emitter to receive a signal from the emitter and extend the height limit. Gerber teaches a laser weapon training system in which the effect of lasers ricocheting from walls onto a user may be simulated (Col. 18: 14-20). Therefore, the walls receive a signal (the fired laser) from the emitter, and reflect the signal (therefore extending the height limit). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Gerber into the invention of Judd in order to provide a firearm training system in which the effect of ricochet may be simulated. Since ricochet is a phenomenon a soldier might encounter in real-world situations, it would be advantageous to include this feature in the invention of Judd.

5. **Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Judd in view of Sampson (US 6,579,097).**

With regard to claim 24, Judd does not disclose the limitation of a second emitter configured to combine with the first emitter to establish the height limit at the vertical boundary. Sampson teaches a firearm training system in which a user wears a sensor which responds to signals from both a stationary emitter, as well as emitters mounted on weapons carried by other players (Col. 3: 1-17). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Sampson into the invention of Judd in order to provide a weapons training system in which a user must learn to avoid contact with signals from both a stationary source, as well as signals from weapons carried by other players. This feature could help a user to learn

how to engage in conflict with an automated weapons system, as well as with other humans, simultaneously.

6. **Claims 28 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Judd in view of Mesiano (US 5,599,187).**

With regard to claims 28 and 33, Judd discloses that a remote control unit may be used to control the movement of the enemy target (Col. 2: 61 – Col. 3: 12). Judd does not disclose the feature wherein the laser direction may be controlled by remote control (as in claim 28), or wherein the emitter comprises a receiver that receives signals from a remote control unit to remotely adjust the position of the emitter on the vertical support member. Mesiano teaches a firearm training system in which the firing mechanism may be remotely controlled (Col. 1: 6-11; Col. 2: 35-51). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Mesiano into the invention of Judd in order to allow a teacher (or other user) to control the movement of the firing mechanism remotely. With his feature, a teacher could respond to the trainee's movements, and thus present a more challenging training scenario.

Response to Arguments

7. Applicant's arguments with respect to claims 21-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

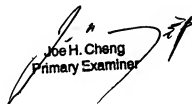
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Crabtree whose telephone number is 571-272-8962. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert P. Olszewski can be reached on (571) 272-6788. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jc

Joshua D. Crabtree
January 3, 2007


Joe H. Cheng
Primary Examiner